

What is claimed is:

1. A hand-off processing apparatus for a mobile communication system comprises a coder to make one transmission signal into two different transmission signals and transmit them to two base stations.

2. The apparatus of claim 1, wherein the coder is a turbo coder.

3. A hand-off processing apparatus for a down-link telecommunication system comprising:

a first coder for coding an inputted bit stream and outputting it;

an interleaver for interleaving the input bit stream and outputting it;

a second coder for coding the codeword bit stream outputted after being interleaved by the interleaver and outputting it;

a first and a second rate matching algorithm processing units for receiving the output bit stream of the first and the second coders and generating outputs of different patterns by using a first and a second rate matching algorithms, respectively; and

a first and a second multiplexers for sequentially outputting the codeword bit streams outputted after being generated by the first and the second rate matching algorithm processing units to two base stations, respectively.

4. The apparatus of claim 3, wherein the first and the second rate matching algorithm processing units have different initial offset values to each other.

5. A hand-off processing apparatus for a mobile communication system comprising:

a first coder for coding an inputted bit stream and outputting it;

5 a second coder for coding an inputted bit stream and outputting it;

a first rate matching algorithm processing unit for receiving an inputted bit stream, performs rate matching, and generating and outputting new codeword bit streams;

10 a second rate matching algorithm processing unit for receiving the codeword bit stream coded by the second coder, performs rate matching, and generating and outputting new codeword bit streams; and

a first and a second multiplexers for sequentially outputting the codeword bit streams generated and outputted from the first and the second rate matching algorithm processing units to two base stations, respectively.

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6. The apparatus of claim 5, wherein the first and the second rate matching algorithm processing units have different initial offset values to each other.

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7. A mobile terminal receiver of a telecommunication system comprising:

a demultiplexer for receiving a radio frequency signal transmitted from two base stations and demultiplexing it;

25 an analog receiver for receiving the radio frequency signal demultiplexed by the demultiplexer, converting it to an intermediate frequency signal and amplifying the

intermediate frequency signal;

a searching unit for continuously searching a pilot signal transmitted from the two base stations among the signals received from the analog receiver and computing a signal-to-interference ratio of the pilot signal;

5 a base station controller for discriminating from which base station the signal searched by the searching unit has been transmitted by using the computed value;

10 rake receivers for inputting the signals transmitted from the two base stations to a code combiner according to the discrimination of the base station controller;

a code combiner for converting the two inputted two signals to a kind of data stream and outputting the data stream; and

a repeating decoder for receiving the data stream, decoding and outputting it.

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8. The mobile terminal receiver of claim 7, wherein the code combiner comprising:

a first demultiplexer for classifying the signals transmitted from one rake receiver by kinds to output them;

20 a second demultiplexer for classifying the signals transmitted from the other rake receiver by kinds to output them;

a deinterleaver for deinterleaving the signals outputted from the second demultiplexer to restore them to their original signals and outputting them;

25 a first combiner for classifying the signals outputted from the deinterleaver and from the first demultiplexer by a single kind of signals and outputting it; and

a second combiner for receiving signals other than the signals inputted to the first combiner among the signals outputted from the first demultiplexer and signals other than the signals deinterleaved after being outputted from the second demultiplexer, classifying them by kinds and outputting them.

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9. The mobile terminal receiver of claim 7, wherein the code combiner comprising:

a first demultiplexer for classifying the signals transmitted from one rake receiver by kinds to output them;

10 a second demultiplexer for classifying the signals transmitted from the other rake receiver by kinds to output them;

a first combiner for classifying the signals outputted the second demultiplexer by a single kind of signals and outputting it; and

15 a second combiner for receiving signals other than the signals inputted to the first combiner among the signals outputted from the first demultiplexer and signals other than the signals outputted from the second demultiplexer, classifying them by kinds and outputting them.

20 10. The mobile terminal receiver of claim 7, wherein the code combiner comprising:

a first demultiplexer for classifying the signals transmitted from one rake receiver by kinds to output them;

a second demultiplexer for classifying the signals transmitted from the other rake receiver by kinds to output them;

25 a first combiner for classifying the signals outputted the second

demultiplexer by a single kind of signals and outputting it; and

a second combiner for receiving a predetermined signal outputted from the first demultiplexer and a predetermined signal outputted from the second demultiplexer, classifying them by kinds and outputting them.

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11. The mobile terminal receiver of claim 7, wherein the code combiner comprising:

a first demultiplexer for classifying the signals transmitted from one rake receiver by kinds to output them;

10 a second demultiplexer for classifying the signals transmitted from the other rake receiver by kinds to output them;

a deinterleaver for deinterleaving the signals outputted from the second demultiplexer to restore them to their original signals and outputting them;

15 a first combiner for classifying the signals outputted from the deinterleaver and from the first demultiplexer by a single kind of signals and outputting it; and

a second combiner for receiving a predetermined signal outputted from the first demultiplexer and a predetermined signal outputted from the second demultiplexer, classifying them by the kinds and outputting them.

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12. The mobile terminal receiver of claim 7, wherein the repeating decoder comprising:

a first decoder for receiving two of the three signals outputted from the code combiner and decoding them;

25 a first interleaver for receiving the decoded signal from the first decoder and interleaving it;

a second interleaver for receiving one of the signals outputted from the code combiner and interleaving it;

a second decoder for receiving the two signals outputted from the first and the second interleavers, decoding them to generate one signal; and

5 a deinterleaver for deinterleaving the signal outputted from the second decoder and inputting it to the first decoder.

13. The mobile terminal receiver of claim 6, wherein the repeating decoder comprising:

10 a first decoder for receiving two of the three signals outputted from the code combiner and decoding them;

a first interleaver for receiving the decoded signal from the first decoder and interleaving it;

15 a second interleaver for receiving one of the signals outputted from the code combiner and interleaving it; and

a second decoder for receiving the two signals outputted from the first and the second interleavers, decoding them to generate one signal.

14. A hand-off processing apparatus for a mobile communication system comprising:

a coder for making a signal into two different signals and outputting them;

and

base station recognizing units for assigning a corresponding base station code to the two signals outputted from the coder and transmitting them to base stations.

15. The apparatus of claim 14, wherein the base station recognizing unit comprising:

a code generator for generating a base station code for discriminating which signal of two signals outputted from the coder is for a corresponding base station; and

a multiplier for multiplying the signal generated by the coder by the base station code generated by the code generator and transmits it to the two base stations.

16. A hand-off processing method for a mobile communication system comprising the steps of:

coding an inputted bit stream;

interleaving the input bit stream;

coding the interleaved bit stream;

performing rate matching at different rates for the codeword bit streams;

and

sequentially outputting the codeword bit streams which have been rate-matched at different rates, to the two base stations:

17. The method of claim 16, wherein, in the step of performing rate matching, rate matching ratio is the same, and initial offset values are different.

18. The method of claim 16, wherein, in the step of performing rate matching, one signal is not rate-matched and the other two signals are rate-

matched so that initial offset values become 2 and 1 or 1 and 2.

19. A hand-off processing method for a mobile communication comprising the steps of:

5 receiving radio frequency signals transmitted from two base stations, converting them into intermediate frequency (IF) signals and amplifying them;

continuously searching pilot signals transmitted from the two base stations among the converted and amplified signals and computing the signal-to-interference ratio of the pilot signals;

10 discriminating from which base stations the pilot signals have been received and Informing the two rake receivers of it;

inputting the signals transmitted from the two base stations to a code combiner according to the discrimination;

15 converting the two signals inputted to the code combiner to one type of data streams and outputting them; and

receiving the data stream, decoding it and outputting the decoded data stream.

20 20. The method of claim 19, wherein, in the step of inputting the signals transmitted from the two base stations to the code combiner, comprising:

classifying the signals transmitted from the rake receiver by kinds and outputting them;

interleaving the signals classified by kinds , restoring them to their original signals and outputting them;

25 deinterleaving the restored signals to one kind of signals and outputting



them; and

receiving the signals classified by kinds and classifying them again by kinds.

5           21.     The method of claim 19, wherein the step of decoding and outputting the data stream, comprising the steps of:

receiving two of the three signals outputted from the code combiner and decoding them;

receiving the decoded signals and interleaving them;

10           receiving one of the signals outputted from the code combiner and interleaving it;

receiving the two interleaved signals and the one signal outputted from the code combiner, decoding them and outputting one signal;

deinterleaving the one decoded signal and outputting it; and

15           receiving the one decoded signal and the signal outputted from the code combiner and decoding them again.

22.     The method of claim 19, wherein the step of decoding and outputting the data stream comprising the steps of:

20           receiving two of the three signals outputted from the code combiner and decoding them;

receiving the decoded signals and interleaving them;

receiving one of the signals outputted from the code combiner and interleaving it;

25           receiving the two interleaved signals and the one signal outputted from the

code combiner, decoding them and outputting one signal;

receiving the one decoded signal and the signal outputted from the code combiner and decoding them again.